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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/679,660

10/06/2003

Bradley J. Eldred

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EXAMINER

CHORBAJI, MONZER R

ART UNIT

PAPER NUMBER

1744

MAIL DATE

DELIVERY MODE

09/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/679,660	Applicant(s) ELDRED, BRADLEY J.	
	Examiner MONZER R. CHORBAJI	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 67-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 67-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This final action is in response to the RCE/Arguments received on 07/03/2007

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 67, 70-71 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka et al (U.S.P.N. 5,510,109) in view of Yahya et al (U.S.P.N. 5,217,626) and further in view of Choi (Bulletin of the Korean Fisheries Society) and Kobayashi et al (U.S.P.N. 4,909,986).

Regarding claims 67 and 70, Tomioka teaches a disinfecting composition that includes the following: a fluid (col.2, lines 48-67, col.3, lines 1-17 where the fluid is the solution that contains the disinfecting composition within), copper metal (col.4, lines 4-10) is dissolved in the fluid, silver metal (col.4, lines 4-10) is dissolved in the fluid, alcohol (col.5, lines 59-62) is dissolved in the fluid and plant extract (col.3, lines 52-55)

Art Unit: 1744

is dissolved in the fluid as well. One of ordinary skill in the art would recognize that each of the components is present in the fluid within a certain concentration range. However, Tomioka does not specifically teach concentration values for the metal ions, the use and the concentration range values of grapefruit seed extract and the use and the concentration range values for glycerin. Yahya's water disinfection composition includes copper ions at a concentration value of about 0.05 mg/L (col.4, lines 1-4) and silver ions at a concentration value of about 0.005 mg/L (col.4, lines 4-6) that results in improved microorganism inactivation in water systems (col.3, lines 17-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Tomioka copper and silver ions concentration values as taught by Yahya since copper and silver ions at such concentration values exhibit improved levels of inactivation of bacteria, viruses, fungi and parasites in water systems (Yahya, col.3, lines 15-19).

Yahya does not teach the use and the concentration range values of grapefruit seed extract and also the use and the concentration ranges for glycerin. Choi teaches that grapefruit seed extract at a concentration range of 50 ppm (ppm= mg/L) completely inhibits growth of various pathogenic microorganisms (lines 6-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one or more of the plant extracts of Tomioka with grapefruit seed extract as taught by Choi for its strong antimicrobial activity (Choi, lines 1-5) and to add it at a concentration of 50 mg/L as taught by Choi since at such a concentration value the growth of many harmful microorganisms is inhibited (Choi, lines 5-9).

Choi does not teach the use and the concentration ranges for glycerin.

Kobayashi teaches including a preservative or antiseptic compound such as glycerol (col.9, lines 57-62) into the deodorizing composition at legally accepted levels.

Furthermore, Kobayashi teaches (example 12, columns 12-16) adding to the deodorant solution glycerol (glycerin and glycerol are synonyms) at a concentration value of 200 ppm. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Tomioka composition by adding glycerol as taught by Kobayashi since at such a concentration value, glycerin acts as an antiseptic agent that leads to the additional destruction of microorganisms in combination with metal ions and grapefruit seed extract components.

Regarding claims 71 and 74, Tomioka teaches that the components of the first antibacterial and antifungal composition are either dissolved in water or alcohol (col.5, lines 59-61) solutions.

4. Claims 68 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka et al (U.S.P.N. 5,510,109) in view of Yahya et al (U.S.P.N. 5,217,626) and further in view of Choi (Bulletin of the Korean Fisheries Society).

Tomioka teaches a disinfecting composition that includes the following: a fluid (col.2, lines 48-67, col.3, lines 1-17 where the fluid is the solution that contains the disinfecting composition within), copper metal (col.4, lines 4-10) is dissolved in the fluid, silver metal (col.4, lines 4-10) is dissolved in the fluid, alcohol (col.5, lines 59-62) is dissolve in the fluid and plant extract (col.3, lines 52-55) is dissolved in the fluid as well. One of ordinary skill in the art would recognize that each of the components is present

Art Unit: 1744

in the fluid within a certain concentration range. However, Tomioka does not specifically teach concentration values for the metal ions and the use and the concentration range values of grapefruit seed extract. Yahya's water disinfection composition includes copper ions at a concentration value of about 0.05 mg/L (col.4, lines 1-4) and silver ions at a concentration value of about 0.005 mg/L (col.4, lines 4-6) that results in improved microorganism inactivation in water systems (col.3, lines 17-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Tomioka copper and silver ions concentration values as taught by Yahya since copper and silver ions at such concentration values exhibit improved levels of inactivation of bacteria, viruses, fungi and parasites in water systems (Yahya, col.3, lines 15-19).

Yahya does not teach the use and the concentration range values of grapefruit seed extract; however, Choi teaches that grapefruit seed extract at a concentration range of 50 ppm (ppm= mg/L) completely inhibits growth of various pathogenic microorganisms (lines 6-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one or more of the plant extracts of Tomioka with grapefruit seed extract as taught by Choi for its strong antimicrobial activity (Choi, lines 1-5) and to add it at a concentration of 50 mg/L as taught by Choi since at such a concentration value the growth of many harmful microorganisms is inhibited (Choi, lines 5-9).

Regarding claim 72, Tomioka teaches that the components of the first antibacterial and antifungal composition are either dissolved in water or alcohol (col.5, lines 59-61) solutions.

5. Claims 69 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomioka et al (U.S.P.N. 5,510,109) in view of Yahya et al (U.S.P.N. 5,217,626) and further in view of Kobayashi et al (U.S.P.N. 4,909,986).

Tomioka teaches a disinfecting composition that includes the following: a fluid (col.2, lines 48-67, col.3, lines 1-17 where the fluid is the solution that contains the disinfecting composition within), copper metal (col.4, lines 4-10) is dissolved in the fluid, silver metal (col.4, lines 4-10) is dissolved in the fluid, alcohol (col.5, lines 59-62) is dissolve in the fluid and plant extract (col.3, lines 52-55) is dissolved in the fluid as well. One of ordinary skill in the art would recognize that each of the components is present in the fluid within a certain concentration range. However, Tomioka does not specifically teach concentration ranges for the metal ions as recited in claim 69 and the use and the concentration range values for glycerin. Yahya's water disinfection composition includes copper ions at a concentration value of about 0.05 mg/L (col.4, lines 1-4) and silver ions at a concentration value of about 0.005 mg/L (col.4, lines 4-6) that results in improved microorganism inactivation in water systems (col.3, lines 17-19). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Tomioka copper and silver ions concentration values as taught by Yahya since copper and silver ions at such concentration values exhibit improved levels

Art Unit: 1744

of inactivation of bacteria, viruses, fungi and parasites in water systems (Yahya, col.3, lines 15-19).

Yahya does not teach the use and the concentration ranges for glycerin.

Kobayashi teaches including a preservative or antiseptic compound such as glycerol (col.9, lines 57-62) into the deodorizing composition at legally accepted levels.

Furthermore, Kobayashi teaches (example 12, columns 12-16) adding to the deodorant solution glycerol (glycerin and glycerol are synonyms) at a concentration value of 200 ppm. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Tomioka composition by adding glycerol as taught by Kobayashi since at such a concentration value, glycerin acts as an antiseptic agent that leads to the additional destruction of microorganisms in combination with metal ions and grapefruit seed extract components.

Regarding claim 73, Tomioka teaches that the components of the first antibacterial and antifungal composition are either dissolved in water or alcohol (col.5, lines 59-61) solutions.

Response to Arguments

6. Applicant's arguments filed on 07/03/2007 have been fully considered but they are not persuasive.

On page 5 of the Remarks section, Applicant argues that the combination of silver and copper at the claimed concentrations in Yahya is ineffective by itself as a disinfectant, that the desired antibacterial and antifungal properties only result when the silver and copper are combined with potassium permanganate since Yahya describes

Art Unit: 1744

that this combination result in synergistic effect and that silver and copper only display disinfectant properties when combined with potassium permanganate then it is clear that potassium permanganate alters the material disinfecting qualities of the combination.

Tomioka teaches combining copper and silver ions in an aqueous solution without specifically showing concentration ranges. Yahya is combined to show that copper and silver ions at concentration ranges cited by the instant claims falls within his teachings regardless of the presence of potassium permanganate since the instant claims do not exclude the presence of potassium permanganate, which upon its addition to the combination of copper and silver, a synergistic disinfection is obtained.

On page 5 of the Remarks section, Applicant argues that because the transitional phrase "consisting essentially of" excludes the presence of other components, which alter the basic and novel material qualities of the subject matter, the use of the transitional phrase in the pending claims excludes the presence of potassium permanganate and that to use the combination of silver and copper alone as a disinfectant would destroy the intent of the composition of Yahya.

The transitional phrase "consisting essentially of" in the instant claims does not exclude the presence of other components as long as the basic and novel material qualities of the subject matter are not altered. The specification does not exclude the use of potassium permanganate nor it teaches that its inclusion is detrimental to the claimed composition. See numbered lines 29-30 of page 11 into numbered lines 1-2 of page 12, where the specification discloses including various disinfecting agents at

reduced concentrations without excluding potassium permanganate. Therefore, since the instant claims do not exclude potassium permanganate and the specification does not exclude nor teaches adding potassium permanganate is detrimental to the claimed composition, then there is no evidence that the presence of potassium permanganate would materially affect the basic and novel characteristics of the composition in the instant claims. See MPEP 2111.03, page 2100-45.

On page 5 of the Remarks section, Applicant argues that Choi relates to a bacterial inhibitor not a biocide that the combination of Choi with Tomioka is improper since the composition of Choi performs a different function than Tomioka's composition and that Choi provides no teaching or suggestion that the disclosed grapefruit seed extract concentrations would function as a biocide.

Tomioka teaches that plant extracts have antibacterial and antifungal properties (col.7, lines 39-40) while Choi teaches that grapefruit seed extract has antimicrobial property (see the description passage). The conventional definitions of the antibacterial and the antimicrobial terms found in the art of disinfection describe them as to involve the ability to destroy or inhibit the growth of microorganisms including bacteria. It is noted that neither the instant claims nor Tomioka or Choi recites the term "biocide". The compositions of Tomioka and Choi perform similar functions, which is providing composition with antimicrobial or antibacterial properties. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one or more of the plant extracts of Tomioka with grapefruit seed extract as taught by Choi for its strong antimicrobial activity (Choi, lines 1-5) and to add it at a

Art Unit: 1744

concentration of 50 mg/L as taught by Choi since at such a concentration value the growth of many harmful microorganisms is inhibited (Choi, lines 5-9).

Conclusion

7. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next office action if they had been entered in the application prior to entry under 37 CFR 1.114. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R. CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 9:00-5:30.

Art Unit: 1744

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GLADYS J. CORCORAN can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRC

E. Leigh McKane
ELIZABETH MCKANE
PRIMARY EXAMINER
Au 1744